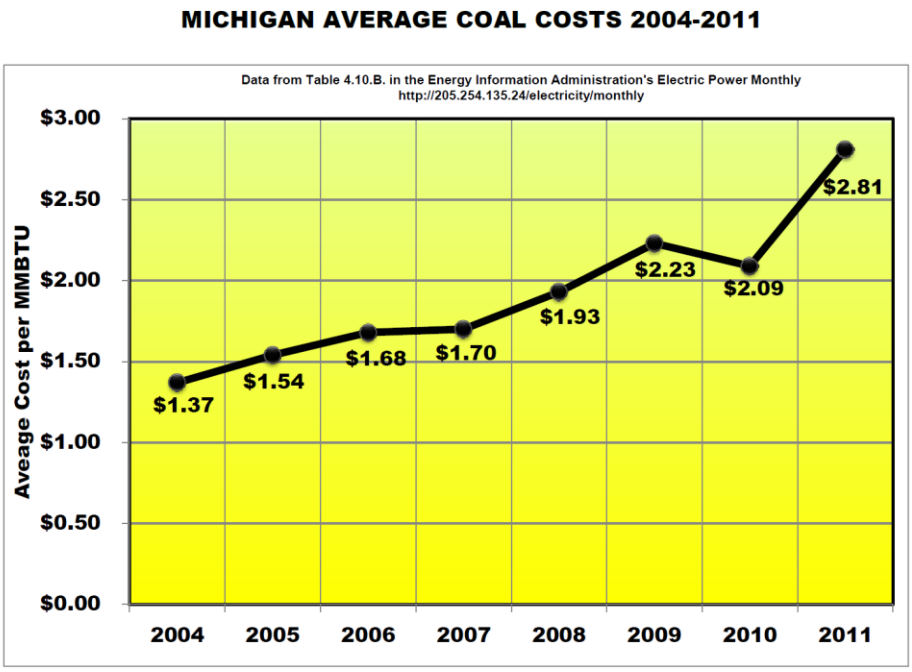
**Additional Areas Question #15: What are the major reasons for the cost increases seen over the past several years for delivered coal to Michigan?**

Over the past decade, the cost of coal delivered to coal-fired power plants across the nation and in Michigan has increased by more than 50%. Michigan has been particularly susceptible to this trend because the state, despite having no in-state coal supplies, relies on coal for approximately 58 percent of its in-state electricity generation. To supply that power, all Michigan power producers collectively paid nearly $1.3 billion to import coal in 2010. From 2002 to 2010, their cumulative purchases of imported coal reached nearly $10.4 billion. More than half of this total—$5.4 billion—was spent by Detroit Edison, while during those years the price the utility paid for coal increased by 81 percent, a much larger increase than the national average. As the chart below indicates, the average cost of Michigan coal has risen steadily from 2004-2011:



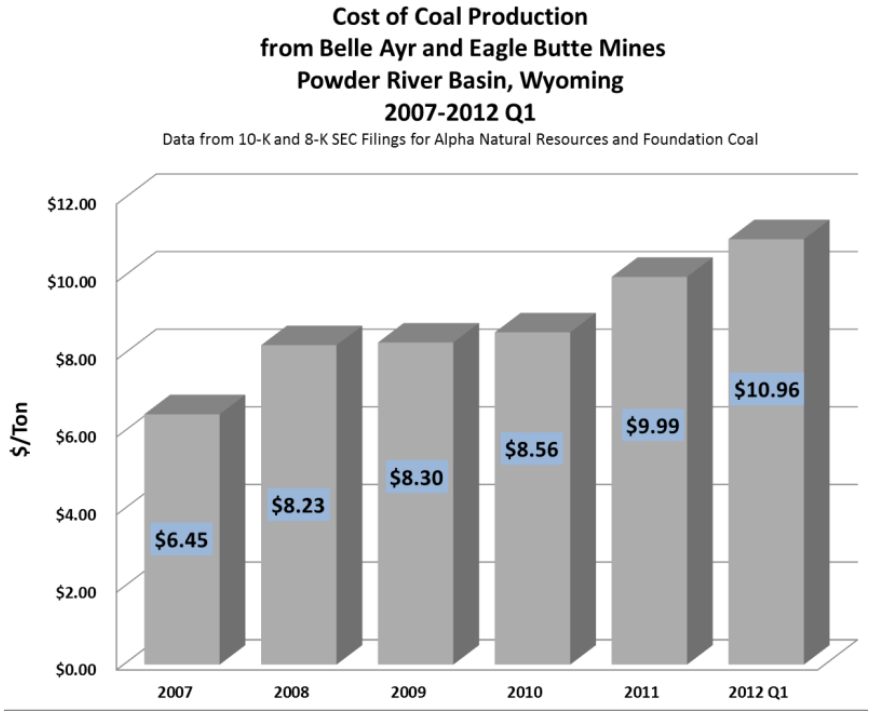

Source: Mufson, S. *Cost of mining coal continues to climb.* Washington Post. October 24, 2012.

When compared to other Midwestern states and the entire U.S., Michigan's coal costs are the highest in the Midwest (although Indiana's coal prices rose at a slightly greater rate) and higher than the national average in 2011.

| | 2004 Coal Cost $/MMBTU | 2011 Coal Cost $/MMBTU | 2004-2011 Average Increase / Yr |
|---|---|---|---|
| Illinois | $1.16 | $2.01 | 10.5 |
| Indiana | $1.21 | $2.47 | 14.9 |
| Iowa | $0.90 | $1.44 | 8.60 |
| **Michigan** | **$1.37** | **$2.81** | **14.7** |
| Minnesota | $1.06 | $1.94 | 11.8 |
| Ohio | $1.32 | $2.29 | 10.5 |
| **Midwest Average** | **$1.17** | **$2.16** | **11.83%** |
| **U.S. Total** | **$1.34** | **$2.41** | **11.40 %** |

Several key factors driving this trend both in Michigan and nationally: rising production costs, rising transportation costs and an increase in coal exports.

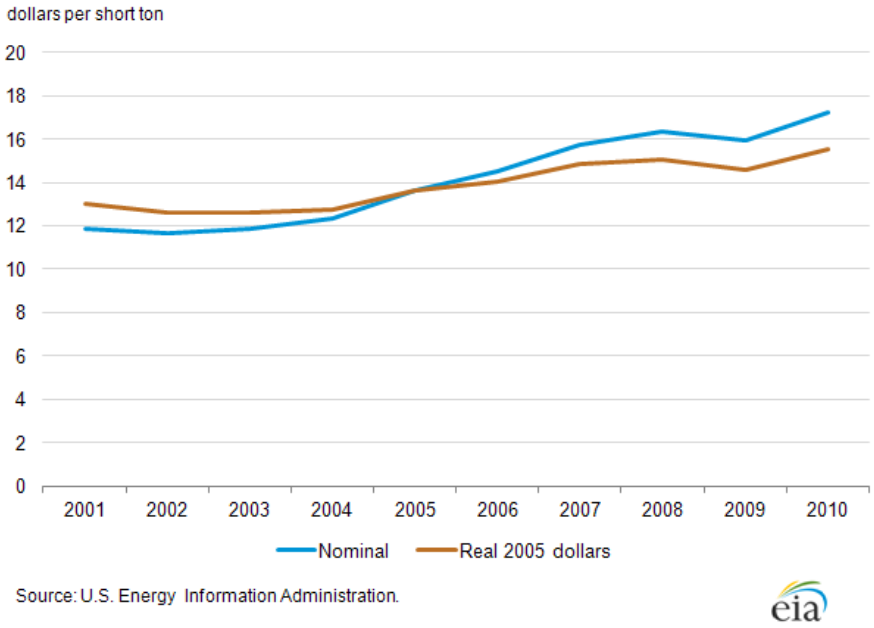
For both eastern and western coal production, costs are rising as the most easily-accessed coal resources are depleted and coal that is more difficult, and therefore more expensive, to mine represents an increasing proportion of delivered coal. These increasing production costs are one factor driving U.S. coal costs upward. The Washington Post cited an observation from the U.S. Energy Information Administration that projected an "upward trend of coal prices [that] primarily reflects an expectation that cost savings from technological improvements in coal mining will be outweighed by increases in production costs associated with moving into reserves that are more costly to mine." As the chart below indicates, the cost of mining some Wyoming coal has risen by nearly 70% since 2007:



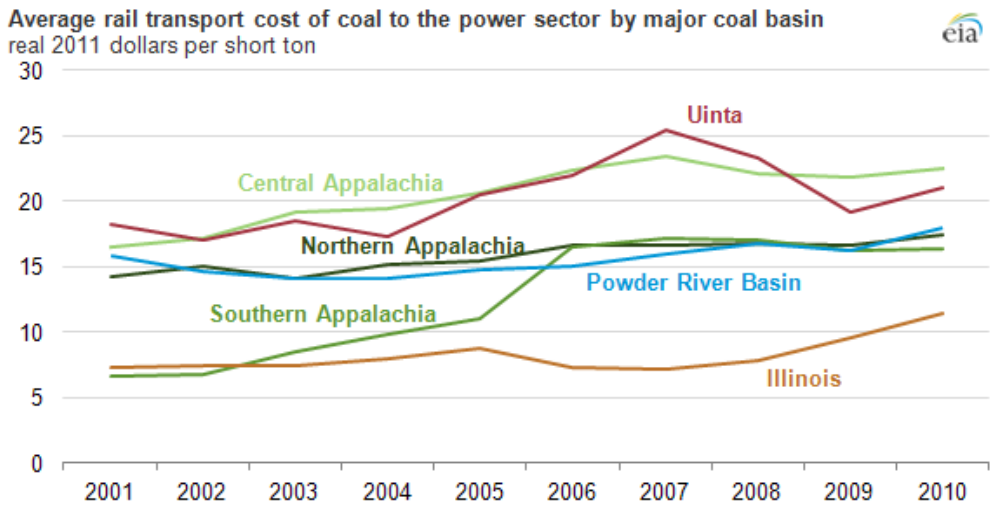

Source: Foster, T., W. Briggs and L. Glustrom. 2012. *Trends in U.S. Delivered Coal Costs: 2004 – 2011.* Clean Energy Action.

Another factor pushing coal prices higher is the cost of transporting coal by rail. Transportation costs for coal are increasing because of rising diesel fuel prices. According to the Energy Information Administration, "The average cost of shipping coal by railroad to power plants increased almost 50% in the United States from 2001 to 2010." EIA reported that, in 2010, transportation costs represent 40% of the total cost of delivered coal, which means that rising transportation costs directly impact coal costs. During this period, average rail transportation costs per short ton rose from $11.83 to $17.25 from 2001 to 2010.

Figure 5. U.S. average rail transport cost of coal to electric generating plants

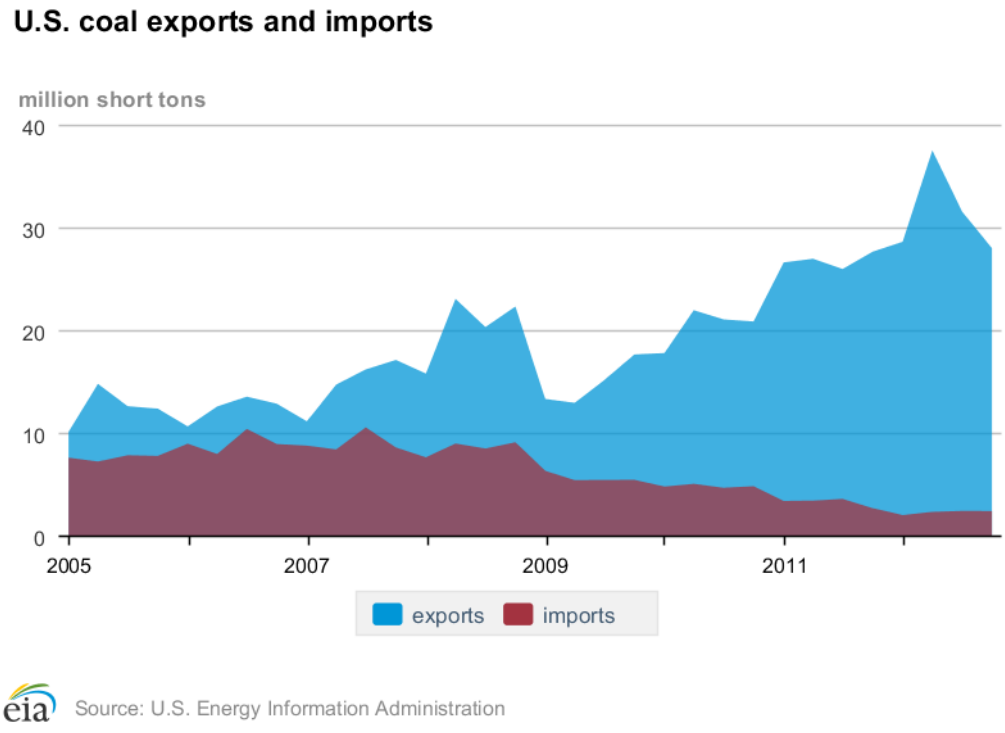



However, the rise in transportation cost varied significantly by geography, with Southern Appalachian costs rising more than Powder River Basin (PRB) costs. Transportation costs for PRB coal can account for more than half the total cost of delivered coal. Michigan is particularly impacted by rising PRB transportation costs since DTE and Consumers Energy collectively spent more than $500 million in 2010 to import PRB coal from Wyoming. Compounding this risk exposure was the recent expiration of DTE's long-term rail contracts and the imposition of diesel fuel surcharges.




**Source: U.S. Energy Information Administration Power Plant Operations Report (EIA-923) and U.S. Surface Transportation Board's Confidential Waybill Sample.**

Finally, greater coal exports are another important source of upward pressure on coal prices as international coal markets provide new opportunities for U.S. coal mining companies. The upward trend in coal exports combined with declining coal imports are reducing domestic coal supplies, contributing to higher U.S. coal prices.



Resources:

1) Union of Concerned Scientists. *Burning Coal, Burning Cash: Detroit Edison's Dependence on Imported Coal.* Fall 2012. Online at http://www.ucsusa.org/assets/documents/clean_energy/Michigan-Coal-Use-Detroit-Edison-Dependence-on-Imported-Coal.pdf.

2) Mufson, S. 2012. *Cost of mining coal continues to climb*. Washington Post. Published: October 24, 2012. Online at http://www.washingtonpost.com/business/economy/cost-of-mining-coal-continues-to-climb/2012/10/24/d15666ca-1931-11e2-bd10-5ff056538b7c_print.html.

3) Foster, T., W. Briggs and L. Glustrom. 2012. *Trends in U.S. Delivered Coal Costs: 2004 – 2011.* Clean Energy Action. Online at http://cleanenergyaction.org/2012/07/11/cea-research-report-trends-in-u-s-delivered-coal-costs-2004-2011/.

4) Energy Information Administration. 2012. *Cost of transporting coal to power plants rose almost 50% in decade.* November 19, 2012. Online at http://www.eia.gov/todayinenergy/detail.cfm?id=8830.

5) Zaski, F. 2011. *Michigan Coal Trends*. West Michigan Environmental Action Counci Blog. June 2011. Online at http://thewmeacblog.org/2011/07/19/michigan-coal-trends-june-2011/

6) Energy Information Administration. 2012. *Coal Transportation Rates to the Electric Power Sector*. November 16, 2012. Online at http://www.eia.gov/coal/transportationrates/index.cfm.

7) Energy Information Administration. 2012. *Cost of transporting coal to power plants rose almost 50% in decade.* November 19, 2012. Online at http://www.eia.gov/todayinenergy/detail.cfm?id=8830.